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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,705	09/19/2001	Robert W. Griffiths	1160-3912.1U	7403

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EXAMINER	
JACKSON, ANDRE K	
ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/889,705	GRIFFITHS ET AL.
	Examiner	Art Unit
	Andre' K. Jackson	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 9 is objected to because of the following informalities:

Regarding claim 9 --is-- should be inserted after "circuitry".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al.

Regarding claim 1, Pomerantz et al. discloses a "Capacitive means for measuring the level of a liquid" which has a sensor with first and second electrodes (Electrode pairs of electrodes 10 and 50) arranged so that a majority of their areas are vertically and horizontally offset from each other (Figure 1 10,40,50). Two electrodes (10 and 50) have several electrode pairs. Any two pairs are vertically offset within those two

electrodes (10 and 50). Electrode 50 is then horizontally offset from electrode 40.

Regarding claim 2, Pomerantz et al. discloses where the first and second electrodes are substantially vertically and horizontally offset from each other (Figure 1, 40,50)

Regarding claim 3, Pomerantz et al. discloses where the first and second electrodes are completely vertically and horizontally offset from each other (Figure 1, 40,50).

Regarding claim 4, Pomerantz et al. discloses where the first and second electrodes are vertically spaced from each other (10, 50 electrode pairs, Figure 1).

Regarding claim 5, Pomerantz et al. discloses where the electrodes comprise substantially two-dimensional plates (Figure 1, 50).

Regarding claim 6, Pomerantz et al. discloses where a conductor (40) is coupled to first and second electrodes (Figure 1).

Regarding claim 14, Pomerantz discloses where the electrodes are horizontally spaced (Figure 1, 40 and 50).

Regarding claim 15, Pomerantz et al. discloses where the first and second electrodes are isolated from a volume within the container (Figure 1, 50).

Regarding claim 16, Pomerantz et al. discloses where the first and second electrodes are placed on a wall of the container (Figure 1, 50).

Regarding claim 17, Pomerantz et al. discloses a mounting structure where the first and second electrodes are affixed (40) acts as a mounting structure in (Figure 1).

4. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of McShane.

Regarding claim 7, Pomerantz et al. does not disclose where the conductors are connected to control circuitry. However, McShane discloses a "Fluid flow measurement" which teaches where the conductors are connected to control circuitry (Figure 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the conductors are connected to control circuitry as taught by McShane since the circuitry may be able to regulate the amount of fluid entering the container.

Regarding claim 8, it is considered a design choice and well within the purview of the skilled artisan to include a "ZIF" connector. Various connectors can be substituted to increase the signal and decrease unwanted noise.

Regarding claims 9,10 and 11, Pomerantz et al. does not disclose where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4MHz and at least 8MHz to one of the electrodes. However, McShane discloses where the control

circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 6, lines 22-31). Therefore, to modify Pomerantz et al. to include where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by McShane since varying the frequency near the upper range gives better results.

5. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of Cohen et al.

Regarding claim 12, Pomerantz et al. does not explicitly disclose that the control circuitry is configured to detect a change in capacitance of the sensor. However, Cohen et al. discloses a "Capacitance-type fluid level sensor for i.v. and catheter bags" which discloses that the control circuitry is configured to detect a change in capacitance of the sensor (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include control circuitry configured to detect a change in capacitance of the sensor as taught by Cohen et al. since a change in capacitance is used in the art to continuously monitor fluid level.

Regarding claim 13, Pomerantz et al. discloses at least one alarm responsive to an output signal from the sensor (74).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of Jackson.

Regarding claim 18, Pomerantz et al. does not disclose where the mounting structure is a thin electrically insulative film. However, Jackson discloses a "Liquid level sensor and electrode assembly therefore" which teaches mounting structure is a thin electrically insulative film (Column 8, line 36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the mounting structure is a thin electrically insulative film as taught by Jackson since having the film makes it easier for the sensors to stay in place when attached to an i.v. bag.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of Jackson as applied to claim 18 above, and further in view of Paglione.

Regarding claim 19, neither Pomerantz et al. nor Jackson discloses where the thin electrically insulative film is Mylar. However, Paglione discloses a "Method and apparatus for detecting liquid composition and actual liquid level" which discloses where the thin electrically insulative film

is Mylar (Column 6, lines 25-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the thin electrically insulative film is Mylar as taught by Paglione since it is flexible and ideal to use with flexible containers.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of Block.

Regarding claim 20, Pomerantz et al. does not disclose where the electrodes are placed within the wall of the container. However, Block discloses a "Process and apparatus for determining the level of molten metal in a metallurgical vessel, the temperature of the molten metal and the extent of wear of the refractory lining of the vessel" which has electrodes placed within the wall of the container (Figure 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the electrodes are placed within the wall of the container as taught by Block since this design would make the invention more compact.

9. Claim 21 and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of and further in view of McShane and Cohen et al.

Regarding claim 21, Pomerantz et al. discloses a sensor with first and second electrodes arranged so that a majority of their areas are vertically and horizontally offset from each other (Figure 1 10,40,50). Two electrodes (10 and 50) have several electrode pairs. Any two pairs are vertically offset within those two electrodes (10 and 50). Electrode 50 is then horizontally offset from electrode 40. Pomerantz et al. does not disclose where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes. However, McShane discloses where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 6, lines 22-31). Therefore, to modify Pomerantz et al. to include where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by McShane since varying the frequency near the upper range gives better results. Neither Pomerantz et al. nor McShane discloses adjusting a fluid level within the container. However, Cohen et al. disclose adjusting a fluid level within the container (Column 11, line 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include adjusting a fluid level within the

container as taught by Cohen et al. since in doing so the user is able to give a prescribed amount of fluid to a patient. The invention of Cohen et al. is a continuous level meter. Therefore, if any adjustment were made the adjustment would immediately reflect in the output signal.

Regarding claims 23 and 24, Pomerantz et al. does not disclose where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes. However, McShane discloses where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes (Column 6, lines 22-31). Therefore, to modify Pomerantz et al. to include where the control circuitry is configured to supply an oscillating signal having a frequency greater than 1MHz, at least 4 MHz and at least 8MHz to one of the electrodes would have been obvious to one of ordinary skill in the art at the time of invention as taught by McShane since varying the frequency near the upper range gives better results.

Regarding claim 25, neither Pomerantz et al. nor McShane disclose where the first and second electrodes are placed on a wall of the container with adhesive. However, Cohen et al. does disclose where the first and second electrodes are placed on a wall of the container with adhesive (Column 2, line 59). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al.

to include where the first and second electrodes are placed on a wall of the container with adhesive as taught by Cohen since the adhesive makes the bond between the bag and the sensors stronger.

Regarding claim 26, Pomerantz et al. discloses forming the capacitive structure on the wall (Figure 1).

Regarding claims 27 and 28, neither Pomerantz et al. nor McShane discloses where the output signal exceeds a reference signal and an alarm is initiated once the output signal exceeds the reference signal. However, Cohen et al discloses where the output signal exceeds a reference signal and an alarm is initiated once the output signal exceeds the reference signal (Column 5, lines16-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the output signal exceeds a reference signal and an alarm is initiated once the output signal exceeds the reference signal as taught by Cohen et al. since the reference signal is indicative of a capacitance value corresponding to a particular fluid level and the alarm would indicate to the user if the fluid level is low.

Regarding claim 29, Pomerantz et al. discloses where the alarm is a visual alarm (74).

10. Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Pomerantz et al. in view of and further in view of McShane and Cohen et al. as applied to claim 21 above, and further in view of Block.

Regarding claim 22, neither Pomerantz et al. nor McShane nor Cohen et al. disclose where the electrodes are placed within the wall of the container. However, Block has electrodes placed within the wall of the container (Figure 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pomerantz et al. to include where the electrodes are placed within the wall of the container as taught by Block since this design would make the invention more compact.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Fri. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are N/A for regular communications and N/A for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A.J.
November 29, 2002

DANIEL S. LARKIN
PRIMARY EXAMINER